

CLAIM LISTING

1. (currently amended) An apparatus for data transmission within a spread-spectrum communication system, the apparatus comprising:

a long-code scrambler having data symbols as an input and outputting the data symbols scrambled with a long code; and

a modulator having the scrambled data symbols as an input and outputting modulated scrambled data symbols, wherein the modulator maps the scrambled data symbols to a constellation and wherein the modulator is a quadrature amplitude modulator.

2. (canceled)

3. (canceled)

4. (original) The apparatus of claim 1 wherein the long-code scrambler comprises:

a long code generator outputting a long code;

a decimator having the long code as an input and outputting a decimated long code; and

a permuter having the decimated long code as an input and outputting a plurality of permuted, decimated long codes.

5. (currently amended) An apparatus for reception of transmitted signals within a spread-spectrum communication system, the apparatus comprising:

a demodulator having a transmitted signal as an input and outputting a demodulated signal, wherein the demodulator is a quadrature amplitude demodulator; and

a long-code despreader having the demodulated signal as an input and outputting despread data.

6. (canceled)

7. (original) The apparatus of claim 5 wherein the long-code descrambler comprises:

a long code generator outputting a long code;

a decimator having the long code as an input and outputting a decimated long code; and

a permuter having the decimated long code as an input and outputting a plurality of permuted, decimated long codes.

8. (currently amended) A method for data transmission, the method comprising the steps of:

receiving symbols by a long-code scrambler;
long-code scrambling the received symbols to produced scrambled symbols; and
modulating the scrambled symbols, wherein the step of modulating the scrambled symbols comprises the steps of mapping the symbols to a constellation and quadrature amplitude modulating the scrambled symbols.

9. (canceled)

10. (canceled)

11. (currently amended) A method for data reception comprising the steps of:

receiving a transmitted signal and demodulating the transmitted signal to produce a demodulated signal, wherein the step of receiving and demodulating the transmitted signal comprises the step of receiving and quadrature amplitude demodulating the received signal;
long-code descrambling the demodulated signal.

12. (canceled)

13. (original) An apparatus comprising:

a long code generator outputting a long code;
a decimator having the long code as an input and outputting a decimated long code; and
a permuter having the decimated long code as an input and outputting a plurality of permuted, decimated long codes.

14. (original) The apparatus of claim 13 further comprising:

a plurality of scramblers having the plurality of permuted long codes as an input and outputting a plurality of scrambled data streams.

15. (original) The apparatus of claim 14 further comprising:

a plurality of quadrature amplitude modulators, each having a scrambled data stream as an input and outputting a modulated data stream.